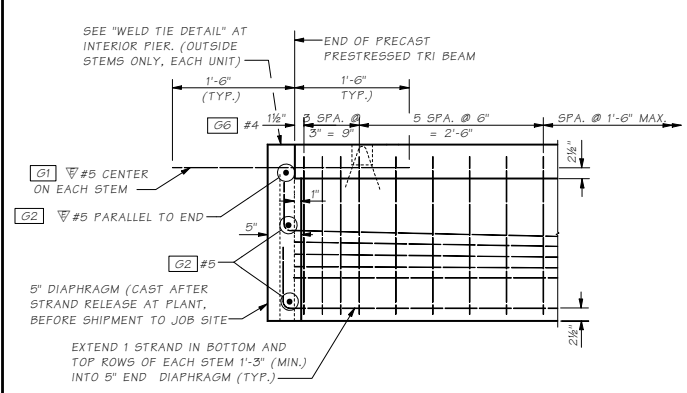
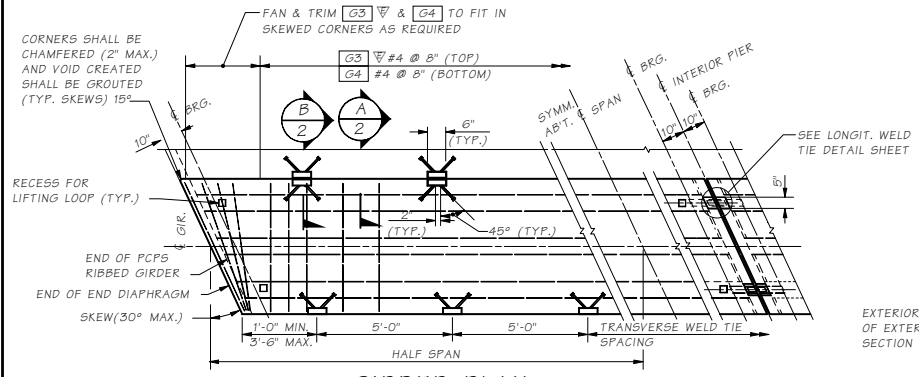


Prestressed Concrete Superstructure

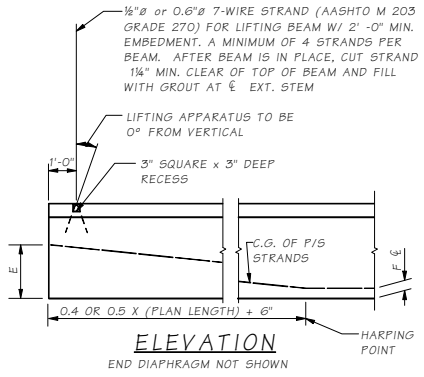
JANUARY 2008



END DIAPHRAGM DETAIL  
DIAPHRAGM DIMENSIONS ARE NORMAL TO SKEW.  
ALL OTHERS ARE PARALLEL TO G GIRDER



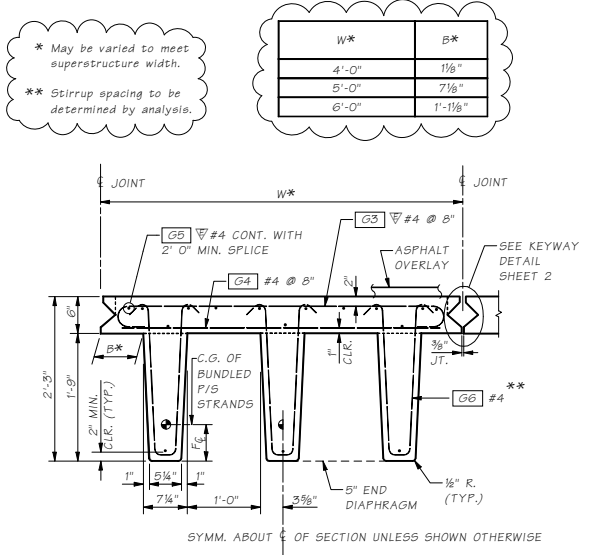
OMIT WELD TIES ON EXTERIOR EDGE OF EXTERIOR GIRDER.  
\* LONGITUDINAL WELD TIES ARE REQUIRED AT END PIER  
WHEN APPROACH SLAB IS USED



ELEVATION  
END DIAPHRAGM NOT SHOWN

NOTES

1. CONCRETE SHALL BE WITH A MINIMUM COMPRESSIVE STRENGTH AT TRANSFER AND FINAL AS SHOWN IN THE DESIGN TABLE. ALL PRESTRESSING STEEL SHALL BE 1/2" OR 0.6" LOW RELAXATION 7-WIRE STRANDS (AASHTO M 203, GRADE 270.) STRANDS SHALL BE TENSIONED INITIALLY TO 0.75 Fpu. PLATES AND ANGLES SHALL CONFORM TO AASHTO M183 AND SHALL BE PAINTED WITH 2 COATS OF STATE FORMULA A-9-73.
2. ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31, GRADE 60. ALL REINFORCING STEEL SPLICES SHALL BE 2'-0" MINIMUM UNLESS SHOWN OTHERWISE. ALL DEFORMED WIRE SHALL BE PER ASTM A 496.
3. ALL REINFORCING BARS SHALL BE PLACED 2" CLEAR OF THE NEAREST FACE OF CONCRETE UNLESS SHOWN OTHERWISE.
4. NO TRAFFIC SHALL BE ALLOWED ON A BEAM ADJACENT TO A GROUTED JOINT UNTIL THE GROUT HAS ATTAINED A MINIMUM STRENGTH OF 4,000 PSI.
5. THE DEFLECTION VALUES LISTED IN THE DESIGN TABLE ARE COMPUTED DEFLECTIONS AT MID-SPAN BASED ON THE FOLLOWING TIME ELAPSE ASSUMPTIONS:
  - INITIAL CONCRETE COMPRESSIVE STRENGTH AT RELEASE WILL BE ATTAINED IN ONE (1) DAY.
  - FINAL CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS WILL BE ATTAINED IN SEVEN (7) DAYS.
  - THE FINAL DEFLECTION IS BASED ON A CONCRETE AGE OF TWO THOUSAND (2000) DAYS.
  - THE FINAL DEFLECTION DUE TO SUPERIMPOSED LOAD (ASPHALT OVERLAY PLUS TRAFFIC BARRIERS) IS BASED ON A CONCRETE AGE OF TWO THOUSAND (2000) DAYS WITH THE LOAD ASSUMED TO BE PLACED SIXTY (60) DAYS AFTER BEAMS ARE CAST.
6. IF THE ACTUAL CONDITIONS VARY SUBSTANTIALLY FROM THOSE ASSUMED ABOVE, THE DEFLECTIONS SHOULD BE MODIFIED AND SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL. THE TIME ASSUMPTIONS MAY VARY BY ± 30%.
7. IT IS INTENDED THAT A MEMBRANE WATERPROOFING AND ASPHALT OVERLAY WILL BE INSTALLED ON THE IN-PLACE SECTION. THE ASPHALT SHALL BE VARIED TO PARTIALLY COMPENSATE FOR THE TWO THOUSAND (2000) DAY SLAB DEFLECTION. THE THICKNESS OF ASPHALT SHALL BE A MINIMUM OF 0.15 FEET AT THE MIDSPAN.

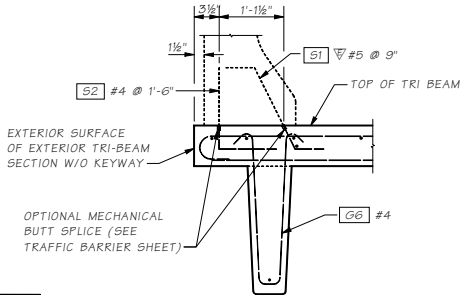


TYPICAL SECTION  
SECTION SHOWN NEAR MIDSPAN

EPOXY COATED				
MARK	LOCATION	SIZE	NO. REQ'D.	BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)
G1	STEM - LONGIT.	#5	6	
G2	DIAPH. - TRANSV.	#5	6	
G3	TRANSV.	#4	VARIES	
G4	TRANSV.	#4	VARIES	
G5	LONGITUDINAL	#4	VARIES	
G6	LONGITUDINAL	#4	VARIES	
S1	T.B. TO DECK TIE	#5	VARIES	
S2	T.B. TO DECK TIE	#4	VARIES	

Bridge Design Engr.	M. STANDARDS	Girders	Tri-Beam	TRI-BEAM GIRDER 4 FT. man
Supervisor				
Designed By				
Checked By				
Detailed By				
Bridge Projects Engr.				
Prelim Plan By				
Architect/Specialet				
DATE		REVISION	BY	APPD

EXTERIOR GIRDER REINFORCING



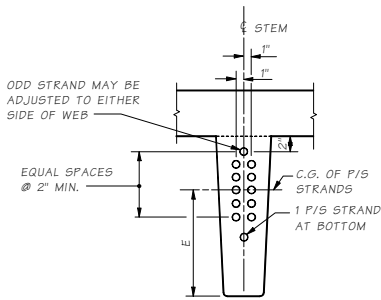
BRIDGE  
AND  
STRUCTURES  
OFFICE



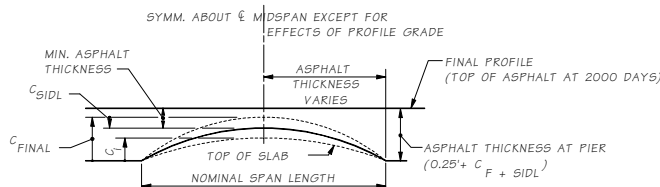
STANDARD  
PRESTRESSED CONCRETE GIRDERS  
PRECAST PRESTRESSED RIBBED GIRDER  
DETAILS 1 OF 2

REVISION SHEET NO.
SHEET
OF
SHEETS

5.6-A22-1

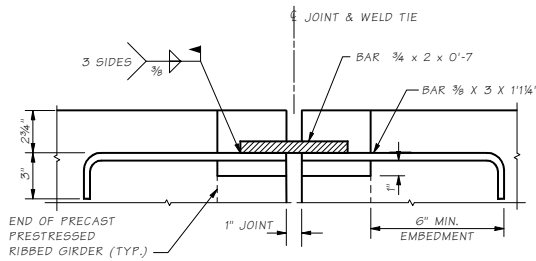


STRAND PATTERN AT  
GIRDER END

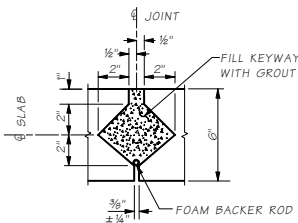


$C_1$  = CAMBER AT TRANSFER DUE TO PRESTRESSING AND GIRDER SELF WEIGHT.  
 $C_{FINAL}$  = CAMBER AT 2000 DAYS.  
 $C_{SIDL}$  = DEFLECTION DUE TO WEIGHT OF ACP OVERLAY AND TRAFFIC BARRIER.  
 $C_1 + SIDL = C_{FINAL} + C_{SIDL}$

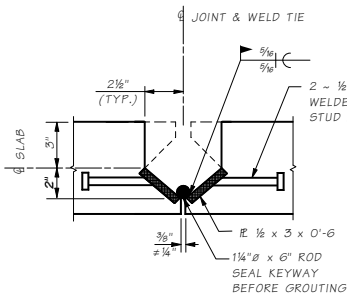
CAMBER DETAIL



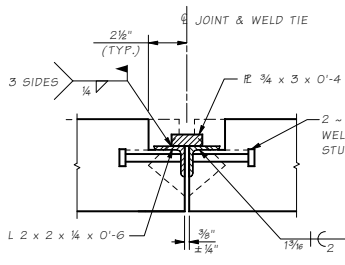
LONGITUDINAL WELD TIE DETAIL



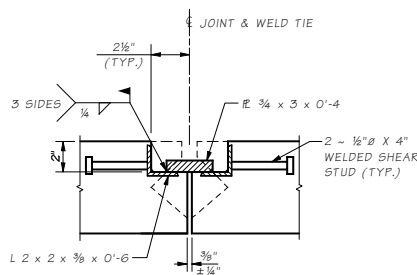
SECTION A  
KEYWAY  
ALTERNATE 1



SECTION B  
WELD TIE  
ALTERNATE #1



SECTION B  
WELD TIE  
ALTERNATE #2

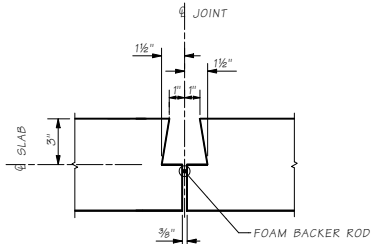


SECTION B  
WELD TIE  
ALTERNATE #3

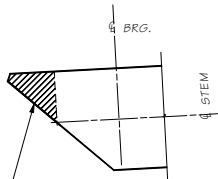
NOTE:  
Dimensions shall be shown in Imperial  
units to the nearest 1/8th inch.

DESIGN TABLE

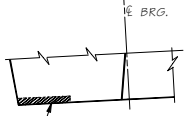
PLAN LENGTH	NOMINAL SPAN CTR. TO CTR. BEARING (FT.)	HARP POINT ( ) x PLAN LENGTH	NO. STRANDS	DIMENSION "W"	F &	DISTANCE "E" TO C.G.S. AT END BLOCK	CONCRETE COMPRESSIVE STRENGTH		ESTIMATED DEFLECTION AT MIDSPAN			
							INITIAL AT RELEASE (KSI)	FINAL AT 28 DAYS (KSI)	UPWARD AT TRANSFER OF PRESTRESS (Δ 1)	FINAL UPWARD FOR RIBBED GIRDER ONLY (Δ 2000) (Δ 1.000)	FINAL DOWNWARD DUE TO SUPER IMPOSED DEAD LOAD (Δ SIDL)	



SECTION A  
KEYWAY  
ALTERNATE 2



PLAN



ELEVATION

STEM RECESS DETAIL

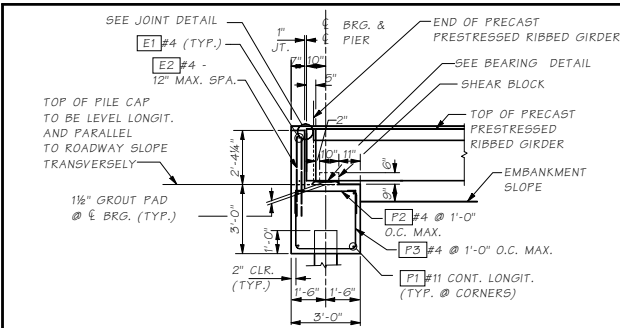
Bridge Design Engr.	M:\STANDARD\Girders\Tri-Beam\TRI-BEAM 4 FT. - 2.man	WORK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By						
Checked By						
Detailed By						
Bridge Projects Engr.						
Prelim Plan By						
Architect/Specialist						
DATE	REVISION	BY	APPROD			

BRIDGE  
AND  
STRUCTURES  
OFFICE

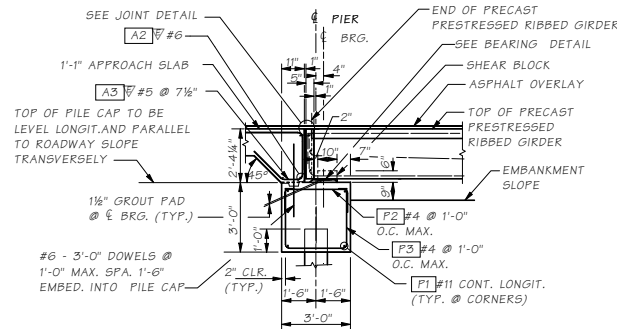


STANDARD  
PRESTRESSED CONCRETE GIRDERS  
PRECAST PRESTRESSED RIBBED GIRDER  
DETAILS 2 OF 2

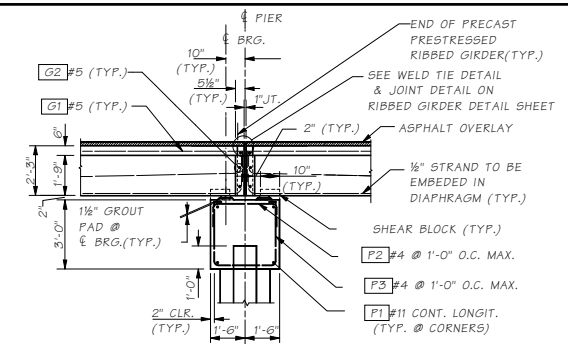
DESIGN SHEET NO.
SHEET
OF
SHEETS



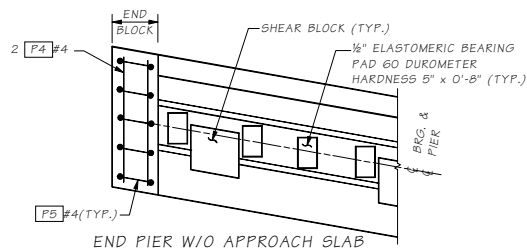
END PIER WITHOUT APPROACH SLAB



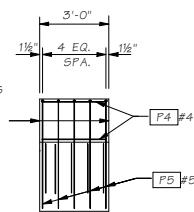
END PIER WITH APPROACH SLAB



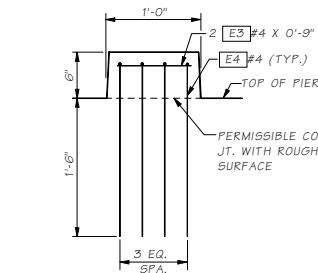
INTERIOR PIER



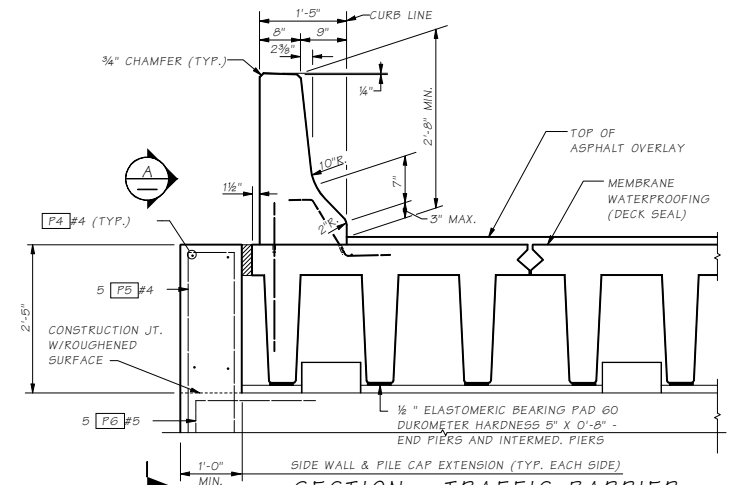
END PIER W/O APPROACH SLAB



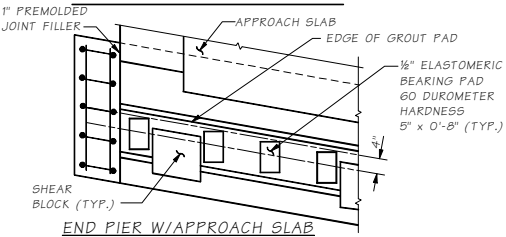
END VIEW  
END BLOCK - BOTH  
ENDS OF PIER



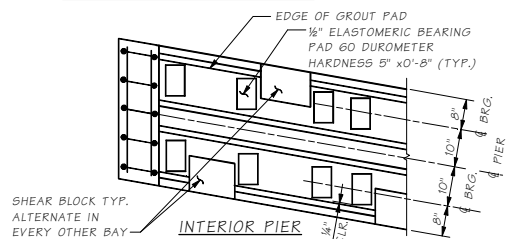
SHEAR BLOCK DETAIL



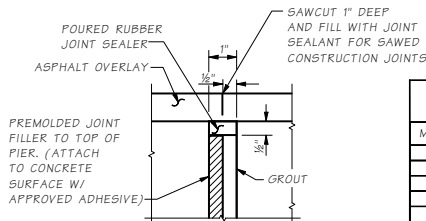
SECTION - TRAFFIC BARRIER



END PIER W/APPROACH SLAB



## BEARING DETAILS



JOINT DETAIL



JOINT DETAIL TAKEN @ INTERIOR PIER  
AND PIER WITH APPROACH SLAB

NOTE: FULL BEARING OF TRI-BEAM UNIT IS REQUIRED AT EACH ELASTOMERIC BEARING.

**BAR LIST**

Epoxy Coated

BENDING DIAGRAM  
ALL REINFORCING SHALL BE AASHTO M 31, GR. 60

MARK	LOCATION	SIZE	NO. REQ'D. PER PIER	
P1	LONGIT - TOP & BOT.	11	4	STR
P2	STIRRUPS	4	VARIES W/PIER LENGTH	
P3	STIRRUPS	4	VARIES W/PIER LENGTH	
P4	END BLOCK REINF.	4	8	STR
P5	END BLOCK STIRR.	5	10	
P6	CORNER DOWELS	5	10	

END BLOCK W/O APPROACH SLAB

E1	LONGIT.	4	4	STR
E2	END BLOCK STIRR.	4	VARIES W/PIER LENGTH	

ADDITIONAL APPROACH SLAB STEEL

A1	DOWELS	6	VARIES W/PIER LENGTH	
A2	LONGIT.	6	3	STR
A3	STIRRUPS	5	VARIES W/PIER LENGTH	

BRIDGE  
AND  
STRUCTURES  
OFFICE



**Washington State  
Department of Transportation**

STANDARD PRESTRESSED CONCRETE GIRDERS
PRECAST PRESTRESSED RIBBED GIRDER PIER DETAILS